

CLAIMS

What is claimed is:

Concept Claims:

1. A comprehensive, IP network compatible, multimedia surveillance and security system comprising a plurality of sensor appliances adapted to connected to a network based server for monitoring, logging, and transmitting data to the server in order to permit comprehensive surveillance of a predetermined area, the system comprising:
 - a. a conventional security sensor which is activated by the occurrence of an activating event and upon activation generates a signal;
 - b. a convertor for converting the conventional sensor signal into a network compatible signal and adapted for sending the converted signal via the network to the server;
 - c. a surveillance sensor appliance controlled by the server for monitoring an area and generating a signal indicating a condition in the monitored area in a programmed response mode controlled by the server, whereby the server receives and logs data transmitted by both the conventional sensor and the sensor appliance.
2. The system of claim 1, the sensor appliance comprising:
 - a. a monitoring device for monitoring an area;
 - b. an activation mechanism for activating the sensor appliance to generate a monitoring signal;
 - c. a transmitter for ending the monitoring signal to the server.
3. The system of claim 2, the sensor appliance further comprising:
 - a. an on-board memory for collecting and storing monitoring signal data as it is generated;
 - b. a transmission control device for selectively transmitting the collected and stored transmission data to the server.
4. The system of claim 3, the transmission control device adapted for responding to a send signal generated by the server.

5. The system of claim 3, the transmission control device adapted for responding to a preselected event within the zone monitored by the sensor appliance.
6. The system of claim 3, the transmission control device adapted for transmitting data to the server upon the occurrence of an event.
7. The system of claim 6, the transmission control device adapted for transmitting both pre-event and post-event data upon the occurrence of an event.
8. The system of claim 1, the sensor appliance comprising an imaging sensor for collecting and generating an image signal.
9. The system of claim 8, the sensor appliance adapted for generating full motion video images.
10. The system of claim 8, the sensor appliance adapted for generating still frame images.
11. The system of claim 8, the sensor appliance adapted for generating both full motion video and still frame images.
12. The system of claim 1, the sensor appliance comprising an audio sensor for collecting and generating an audio signal in the zone of operation of the sensor appliance.
13. The system of claim 1, the sensor appliance comprising an environmental condition sensor for collecting and generating an environmental condition signal in the zone of operation of the sensor appliance.
14. The system of claim 13, the sensor appliance comprising a heat sensor.
15. The system of claim 13, the sensor appliance comprising a smoke detector.
16. The system of claim 13, the sensor appliance comprising a fire detector.

17. The system of claim 13, the sensor appliance comprising a chemical detector.
18. A comprehensive, IP network compatible, multimedia surveillance and security system comprising a plurality of sensor appliances adapted to connected to a network based server for monitoring, logging, and transmitting data to the server in order to permit comprehensive surveillance of a predetermined area, the system comprising:
 - a. a multi-function image sensor appliance adapted for generating an image signal representing the visual condition of a monitored zone of operation, the image signal comprising both still frame image data and motion video image data;
 - b. a transmitter for sending image data to the server.
19. The system of claim 18, wherein the multi-function image sensor appliance is responsive to an event in order to begin transmitting image data to the server.
20. The system of claim 18, wherein the multi-function image sensor appliance is responsive to a signal generated by the server in order to begin transmitting image data to the server.
21. The system of claim 18, wherein the multifunction image sensor appliance is responsive to a signal generating and transmission activation signal for transmitting both pre-event and post-event data to the server.
22. The system of claim 18, the server is adapted for mining the image data stored in the sensor memory.
23. The system of claim 18, wherein the sensor appliance further includes a receiver for receiving control signals from the server for activating the sensor, initiating and terminating transmission of data to the server and for managing control functions.
24. The system of claim 1, wherein said sensor appliance includes a wireless transmitter and said server includes a wireless receiver, whereby data transmission is over a wireless system.

25. A comprehensive, IP network compatible, multimedia surveillance and security system comprising a plurality of sensor appliances adapted to connected to a network based server for monitoring, logging, and transmitting data to the server in order to permit comprehensive surveillance of a predetermined area, the system comprising:
- a. a plurality surveillance sensor appliances controlled by the server for monitoring an area and generating a data signal indicating a condition in the monitored area controlled by the server, whereby the server receives and logs signal data;
 - b. each sensor appliance adapted for transmitting the generated signal;
 - c. a network for communicating the plurality of sensor appliances with a central server;
 - d. the central server adapted for collecting and managing the data transmitted by the plurality of sensor appliances.
26. The system of claim 25, wherein the data from each of the various sensor appliances is transmitted to the server as it is created, wherein there is further included a monitor associated with the server for displaying the data, the server adapted for showing image data in a step video format.
27. The system of claim 25, wherein a plurality of the plurality of sensor appliances are image data generators and wherein the sensor is adapted for managing the simultaneous receipt of data from a plurality of sensors.
28. The system of claim 25, wherein the data generated by each of the sensor appliances is stored in memory at each appliance and is transmitted to the server upon occurrence of an event within the zone of operation of each sensor.
29. The system of claim 28, wherein the event is created by the server.
30. The system of claim 28, wherein the event is an action occurring at the location of the sensor appliance.
31. The system of claim 28, wherein each sensor is adapted for transmitting both pre-event and post-event data.

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32. The system of claim 25, the system further including a dispatch generator whereby the occurrence of a specified event generates a dispatch signal to a predetermined response team.
33. The system of claim 25, wherein the sensor appliance includes a location identifier component in the data signal.
34. The system of claim 33, wherein the system further includes a dispatch generator, whereby the occurrence of a specified event generates a dispatch signal to a predetermined response team based on location of the response team.

System Claims:

35. A comprehensive IP network compatible multimedia surveillance system for monitoring an area or location incorporating wireless sensors, the system comprising:
 - a. a sensor for detecting events in a area under surveillance and creating an IP data signal for identifying the event;
 - b. a transmitter for sending the IP data signal;
 - c. a receiver for receiving the IP data signal at a location remote from the sensor;
 - d. a monitor station;
 - e. a communication system for communicating the receiver with the monitor station for transmitting the received data to the monitor station.
36. The system of claim 35, further including a server associated with the system and adapted for receiving and managing the data signal.
37. The system of claim 35, wherein the monitor is remote from the sensor system and is connected thereto via an IP network.
38. The system of claim 36, wherein the monitor is remote from the sensor system and is connected thereto via an IP network.

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39. The system of claim 35, wherein the sensor is connected to the monitor via an IP wireless network, the sensor further including a wireless transmitter for transmitting the data signal and the monitor including a wireless receiver.
40. The system of claim 35, wherein each of the components thereof are connected via a wide area network.
41. The system of claim 40, wherein said wide area network is wireless and wherein each of said components includes a wireless transmitter for sending data and a wireless receiver for receiving data.
42. The system of claim 40, wherein said wide area network comprises a CDPD network.
43. The system of claim 40, wherein said wide area network comprises a digital cellular telephone system.
44. The system of claim 40, wherein said wide area network comprises a two-way pager system.
45. The system of claim 40, wherein said wide area network is a common carrier.
46. The system of claim 36, wherein each of the system components are connected via an IP wide area network.
47. The surveillance system of claim 35, further including a display screen associated with the monitor station for displaying the collected data.
47. The surveillance system of claim 35, further including a memory associated with the monitoring station for archiving the collected data.
48. The surveillance system of claim 35, wherein the communication system for communicating the wireless receiver with the monitor station comprises a hardwired local area network.

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49. The surveillance system of claim 35, wherein the communication system for communicating the wireless receiver with the monitor station comprises a wireless local area network.
50. The surveillance system of claim 35, wherein the communication system for communication the wireless receiver with the monitor station comprises a gateway to the Internet and the Internet, and wherein the monitor station is at a remote location having Internet access.
51. The surveillance system of claim 35, wherein the sensor includes an analog camera.
52. The surveillance system of claim 52, wherein the sensor further includes an audio sensor.
53. The surveillance system of claim 7, wherein the sensor further includes an event detector.
54. The surveillance system of claim 54, wherein said event detector is a motion detector.
55. The surveillance system of claim 54, wherein said event detector is a heat sensor.
56. The surveillance system of claim 54, wherein said event detector is a proximity switch.
57. The surveillance system of claim 54, wherein said event detector is a latch.
58. The surveillance system of claim 35, wherein said sensor is a digital camera.
59. A comprehensive multimedia surveillance system for monitoring an area or location utilizing a local system network for communicating sensor data to and from a central server station, the system comprising:
 - a. a sensor appliance for surveilling and monitoring a specific area, the sensor coupled to the local system network;
 - b. a server station coupled to the network for transmitting and receiving data to and from the sensor appliance.

60. The surveillance system of claim 60, further including a display screen associated with the server station for displaying the collected data.
61. The surveillance system of claim 60, further including a memory associated with the server station for archiving the collected data.
62. The surveillance system of claim 60, wherein the local system network comprises a hardwired local area network.
64. The surveillance system of claim 60, wherein the local system network comprises a wireless local area network.
65. The surveillance system of claim 60, wherein the local system network comprises a combination wireless (WLAN) and hardwired (LAN) local network.
66. The surveillance system of claim 60, wherein the communication system for communication the wireless receiver with the monitor station comprises a gateway to the Internet and the Internet, and wherein the monitor station is at a remote location having Internet access.
67. The surveillance system of claim 60, wherein the sensor includes an analog camera.
68. The surveillance system of claim 60, wherein the sensor further includes an audio sensor.
69. The surveillance system of claim 60, wherein the sensor further includes an event detector.
70. The surveillance system of claim 68, wherein said event detector is a motion detector.
71. The surveillance system of claim 68, wherein said event detector is a heat sensor.
72. The surveillance system of claim 68, wherein said event detector is a proximity switch.

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73. The surveillance system of claim 68, wherein said event detector is a latch.
74. The surveillance system of claim 60, wherein said sensor is a digital camera.
75. The surveillance system of claim 60, further including means for coupling the system to a wide area network (WAN).
76. The surveillance system of claim 75, wherein said Wide Area Network is the Internet.
77. The surveillance system of claim 75, further including a remote server station for transmitting and receiving data to and from the sensor appliance via the wide area network.
78. The surveillance system of claim 76, the remote server station further capable of transmitting and receiving data to and from the local server station.
79. An IP compatible comprehensive multimedia surveillance system for monitoring an area or location without requiring hardwired sensors, the system comprising:
- a wireless camera sensor for visually monitoring an area under surveillance and collecting image data for recording the event;
 - a wireless transmitter for sending the data;
 - a wireless receiver for receiving the data at a location from the sensor;
 - a monitor station including a display screen for displaying the event data;
 - a communication system for communicating the wireless receiver with the monitor station for transmitting the received data to the monitor station.
80. The surveillance system of claim 79, the monitor station further including a memory for storing the event data.
81. The surveillance system of claim 79, further wherein the communication system is a local area network and the monitor station is on the local area network, and there is further included an Internet gateway for transmitting the collected data over the Internet and a

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second monitor station having Internet access and located on the Internet for receiving the collected data.

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82. The surveillance system of claim 79, further including a server for receiving and distributing the data, the server distributing the data to the monitor station via the local area network.
83. A comprehensive multimedia surveillance system for monitoring an area or location without requiring hardwired sensors, the system comprising:
- a. a wireless sensor for detecting events in a area under surveillance and collecting data for recording the event;
 - b. a wireless transmitter for sending the data;
 - c. a wireless receiver for receiving the data at a location from the sensor;
 - d. a server;
 - e. a IP communication system for communicating the wireless receiver with the server for transmitting the received data to server.
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84. The surveillance system of claim 83, the server adapted for processing and distributing the data, the surveillance system further including a monitor station in communication with the server for receiving the data.
85. The surveillance system of claim 83, the monitor station further including a display screen for displaying data distributed to it by the server.
86. The surveillance system of claim 83, the monitor station further including a memory for storing the data distributed to it by the server.
87. The surveillance system of claim 83, wherein the communication system is a hardwired local area network and the sever is on the local area network.
88. The surveillance system of claim 83, wherein the communication system is a wireless local area network and the server is on the local area network.

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89. The surveillance system of claim 83, wherein the communication system includes a gateway to the Internet and the server is on the Internet.
90. The surveillance system of claim 89, wherein the communication system further includes a local area network associated with the receiver and the monitor station is on the local area network.
91. The surveillance system of claim 89, wherein the monitor station is on the Internet.
92. The surveillance system of claim 35, the sensor further including a receiver for receiving signals from the monitor station and the wireless receiver further including a transmitter for sending signals to the sensor, the monitor station further including an input device for sending control signals to the sensor.
93. The surveillance system of claim 35, further including a server, wherein the monitor station communicates only with the server and the wireless receiver communicates only with the server.
94. The surveillance system of claim 93, the server adapted for collecting and distributing the collected data to distribution points, said distribution points comprising monitor stations for receiving and reacting to the collected data.
95. The surveillance system of claim 94, wherein a distribution point comprises a two-way communication device adapted for sending a response signal to the server when data is received.
96. The surveillance system of claim 95, wherein said communication device is a voice cell phone.
97. The surveillance system of claim 95, wherein said communication device is a land line telephone.

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98. The surveillance system of claim 95, wherein said communication device is a two-way pager.
99. The surveillance system of claim 95, wherein the communication device is a voice mail service.
100. The surveillance system of claim 95, wherein the communication device is a digital cell phone
101. The surveillance system of claim 95, wherein the communication device is a PDA.
102. The surveillance system of claim 95, further including wired sensors associated with the communication system.
103. The surveillance system of claim 35, wherein the camera captures full motion video.
104. The surveillance system of claim 103, wherein the camera is programmed to capture step action video.
105. The surveillance system of claim 103, wherein the camera is programmed to capture still frame images.
106. The surveillance system of claim 95, wherein the server is programmed to send information messages to specific communication devices upon receipt of specified data from the sensor.
107. The surveillance system of claim 95, wherein the communication device is mobile and further includes a geolocation device and wherein the server communicates to the mobile device in closest proximity to an event when event data is received from the sensor.
108. The surveillance system of claim 35, wherein the sensor is mobile and further includes a geolocation device for generating and sending tracking data to the server, and wherein the server tracks the location of the mobile sensor.

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Configuration Claims:

109. A comprehensive, multimedia monitoring and surveillance system adapted for installation in a local area network, comprising:
- a. a system processor;
 - b. surveillance appliances distributed throughout the system and communicating with the system server via the local area network.
110. The system of claim 109, comprising a hardwired local area network wherein the surveillance appliances are hardwired connected to the network.
111. The system of claim 109, comprising a wireless local area network wherein the surveillance appliances are connected to the network via a wireless transmitter and receiver.
112. The system of claim 109, comprising a combined hardwired local area network and wireless area network, wherein the surveillance appliances further comprise at least one hardwired surveillance appliance hardwired to the network and at least one wireless surveillance appliance connected to the network via a wireless transmitter and receiver.
113. The system of claim 109, wherein the server includes a monitor station for monitoring events at the surveillance appliance.
114. The system of claim 109, wherein said surveillance appliance is adapted to be activated by an event occurring at the location of the surveillance appliance.
115. The system of claim 109, wherein said surveillance appliance is adapted to be activated by a control signal transmitted from the server station.
116. The system of claim 115, wherein the control signal is a time sequenced programmed activation signal.
117. The system of claim 115, wherein the control signal is manually generated by an operator.

118. The system of claim 115, the surveillance appliance further including a location generation signal, whereby the server can determine the location of an event detected by the surveillance appliance.
119. The system of claim 118, further including direct access links to a response team via the system network and wherein the server is adapted for sending an alert signal to a response team upon receipt of an event detection signal from a surveillance appliance.
120. The system of claim 118, wherein the alert signal is location sensitive.
121. The system of claim 118, wherein the alert signal is event sensitive.
122. The system of claim 118, wherein the alert signal is transmitted to a response team adapted to provide the most efficient response to an event.
123. The system of claim 122, wherein the response team is location sensitive.
124. The system of claim 122, wherein the response team is event sensitive.
125. The system of claim 123, wherein the response team is both location and event sensitive.
126. The system of claim 115, wherein the response team link further includes a personnel communications device that is connected to the system network for transmitting and receiving signals from the server.
127. The system of claim 126, wherein the server is adapted for sending route and event location data to the response team.
128. The system of claim 126, wherein the personnel communications device includes a location signal generator for generating a personnel location signal to the server.

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129. The system of claim 118, wherein the location signal generator is a programmed code identifying the location of the surveillance appliance.
130. The system of claim 118, wherein the location signal generator is a global positioning system (GPS) signal generator and receiver.
131. The system of claim 128, wherein the location signal generator is a global positioning system (GPS) signal generator and receiver.
132. The system of claim 109, further including a telephone gateway for connecting the system to telephone alert systems.
133. The system of claim 131, wherein said telephone gateway is a plain old telephone system.
134. The system of claim 131, wherein said telephone gateway is a wireless telephone system.
135. The system of claim 109, wherein the surveillance appliance includes a local memory for recording the surveilled location.
136. The system of claim 135, wherein the server can access pre-recorded events at the surveillance appliance upon the generation of an alert signal.
137. The system of claim 136, wherein said alert signal is generated by an event monitored by the surveillance appliance.
138. The system of claim 137, wherein said alert signal is generated by a server data transmission.
139. The system of claim 109, wherein the server logs collected information for reconstruction of events.
140. The system of claim 109, further including a gateway for connecting historic, prior art alarm and monitoring systems to the system for communicating signals generated thereby to the server via the network.

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Appliance Claims:

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141. An appliance for use in combination with an network supported, multimedia surveillance and monitoring system, the appliance comprising:
 - a. a signal generator for generating a transmittable signal to the network for indicating the presence of an event within the appliance operating zone;
 - b. a processor for converting the signal into a data signal transmittable over the network; and
 - c. on board memory for collecting pre-event data.
 142. The appliance of claim 141, wherein the network is an IP network.
 143. The appliance of claim 141, wherein the network is an Ethernet network.
 144. The appliance of claim 141, wherein the network is a netbios network.
 145. The appliance of claim 141, wherein said appliance is wireless and wherein said appliance includes a wireless transmitter and receiver for transmitting and receiving data to and from the network, and wherein the network includes a wireless transmitter and receiver for transmitting and receiving data to and from the appliance.
 146. The appliance of claim 141, further including a location signal generator.
 147. The appliance of claim 141, wherein said location signal generator is a global positioning system (GPS) signal generator.
 148. The appliance of claim 141, further including an audio signal transmitter and receiver.
 149. The appliance of claim 141, further including an image signal generator.
 150. The appliance of claim 149, wherein said image signal generator is a full motion video generator.

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151. The appliance of claim 149, wherein said image signal generator is a high resolution still image generator.
152. The appliance of claim 141, further including an on-board image compressor.
153. The appliance of claim 141, further including an alphanumeric display and wherein said network system is adapted for transmitting alphanumeric data to said appliance for display at the alphanumeric display.
154. The appliance of claim 141, further including an identification mechanism for positively identifying authorized personnel in the operating zone of the appliance.
155. The appliance of claim 154, said identification mechanism comprising a card reader.
156. The appliance of claim 154, said identification mechanism comprising a bio-medical sensor.
157. The appliance of claim 154, wherein an activation signal is generated once positive identification is established.
158. The appliance of claim 154, further including a visual identification back-up device.
159. The appliance of claim 154, further including an audio identification back-up device.
160. The appliance of claim 151, further comprising full motion control over the imaging device whereby the device may be selective aimed and focused within the operating zone of the appliance.
161. The appliance of claim 151, said full motion control comprising zoom, focus, iris, tilt, angle and lighting level control systems.

Video and Image Management Claims:

162. A method for collecting, transmitting and managing video and still image data produced

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by selectively place video surveillance cameras, comprising:

- a. collecting said data
- b. storing the collected data locally at the camera;
- c. selectively transmitting the stored data when the camera is activated to transmit; and
- d. dumping stored data when not transmitted for a specific period of time.

163. The method in accordance with claim 162, further comprising the step of:
 - a. selecting a preselected portion of stored data prior to activation for transmission and continuing transmission of the data until deactivated.
164. The method of claim 162, wherein the collected data is still image data and wherein there is further included the step of converting from still image data to full motion video upon activation for transmission.
165. The method of claim 162, wherein the collected data is in an analog format and further including the step of converting the collected data to a digital format prior to storing said data.
166. The method of claim 162, wherein the activation step comprises manual selection.
167. The method of claim 162, wherein the activation step comprises generation of an activation signal in response to detection of an event.
168. The method of claim 167, wherein said detection comprises the detection of motion.
169. The method of claim 167, wherein said detection comprises the detection of a sound.
170. The method of claim 167, wherein said detection comprises the detection of a change in environmental conditions.

Claims directed to Event Mapping and Dispatch of Response Personnel:

171. A method for identifying the location of an event and dispatching response personnel thereto, comprising the steps of:

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- a. identifying the location of an event and transmitting a location signal;
- b. selecting response personnel closest to the event and transmitting event data thereto;
- c. generating a map from the selected response personnel to the event location.

- 172. The method in accordance with claim 171, wherein the identification step comprises providing a geolocation signal associated with event sensors and wherein the response personnel are also provided with a geolocation signal generating device.
- 173. The method of claim 172, wherein the geolocaion signal associated with the sensor is a location address.
- 174. The method of claim 172, wherein the geolocation signal associated with the sensor is a gps signal generator.
- 175. The method of claim 172, wherein the geolocation signal device associated with the response personnel is a gps signal generator.
- 176. The method of claim 173, wherein the geolocation signal device associated with the response personnel comprises an address code associated with the personnel which is identifiable by sensors, wherein the sensor address and the response personnel address are combined to identify the location of the response personnel.
- 177. The method of claim 172, futher including the step wherein three acoustic event detectors are utilized to monitor an acoustic event and wherein the precise location of the event is defined by triangualtion.

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